

Title (en)  
NANOLAMINATED COATED CUTTING TOOL

Title (de)  
NANOLAMINIERTES UND BESCHICHTETES SCHNEIDEWERKZEUG

Title (fr)  
OUTIL DE COUPE A REVETEMENT NANOSTRATIFIE

Publication  
**EP 2438209 A4 20160914 (EN)**

Application  
**EP 10783656 A 20100528**

Priority  
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Abstract (en)  
[origin: WO2010140958A1] The present invention relates to a cutting tool insert for machining by chip removal comprising a body of a hard alloy of cemented carbide, cermet, ceramics, cubic boron nitride based material or high speed steel, onto which a hard and wear resistant coating is deposited by physical vapour deposition (PVD). Said coating comprises a polycrystalline nanolaminated structure of alternating layers A and B where layer A is (Ti,Al,Me1)N and Me1 is optionally one or more of the metal elements from group 3, 4, 5 or 6 in the periodic table, layer B is (Ti,Si,Me2)N and Me2 is optionally one or more of the metal elements from group 3, 4, 5 or 6 in the periodic table including Al with a thickness between 0.5 and 20 um and method of making the same. This insert is particularly useful in metal cutting applications generating high temperatures with improved edge integrity, e.g., machining of super alloys, stainless steels and hardened steels.

IPC 8 full level  
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**B23B 27/14** (2013.01 - KR); **B23B 27/148** (2013.01 - SE); **C04B 41/009** (2013.01 - EP KR US); **C04B 41/5062** (2013.01 - SE); **C04B 41/52** (2013.01 - EP KR US); **C04B 41/87** (2013.01 - SE); **C04B 41/89** (2013.01 - EP KR SE US); **C23C 14/0641** (2013.01 - EP KR SE US); **C23C 14/24** (2013.01 - SE); **C23C 14/325** (2013.01 - SE); **C23C 28/027** (2013.01 - KR); **C23C 28/042** (2013.01 - EP KR US); **C23C 28/044** (2013.01 - EP KR US); **C23C 28/42** (2013.01 - EP KR US); **C23C 30/005** (2013.01 - EP KR SE US); **B23B 2222/36** (2013.01 - EP KR US); **B23B 2224/24** (2013.01 - EP KR US); **B23B 2228/08** (2013.01 - EP US); **B23B 2228/10** (2013.01 - EP US); **Y10T 29/49995** (2015.01 - EP US); **Y10T 407/27** (2015.01 - EP US); **Y10T 428/24975** (2015.01 - EP US); **Y10T 428/265** (2015.01 - EP US)

C-Set (source: EP US)  
1. **C04B 41/52 + C04B 41/4529 + C04B 41/5063 + C04B 41/5068**  
2. **C04B 41/52 + C04B 41/4529 + C04B 41/5062 + C04B 41/5066 + C04B 41/5068**  
3. **C04B 41/009 + C04B 35/00**  
4. **C04B 41/009 + C04B 35/5831**

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• [X] KR 100876366 B1 20081231 - KORLOY INC [KR] & US 2011033723 A1 20110210 - KIM HYUNG KWUN [KR], et al  
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• [X] CHANG ET AL: "Characteristics and performance of TiSiN/TiAlN multilayers coating synthesized by cathodic arc plasma evaporation", SURFACE AND COATINGS TECHNOLOGY, ELSEVIER BV, AMSTERDAM, NL, vol. 202, no. 4-7, 13 November 2007 (2007-11-13), pages 987 - 992, XP022342050, ISSN: 0257-8972, DOI: 10.1016/J.SURFCOAT.2007.06.024  
• See also references of WO 2010140958A1

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